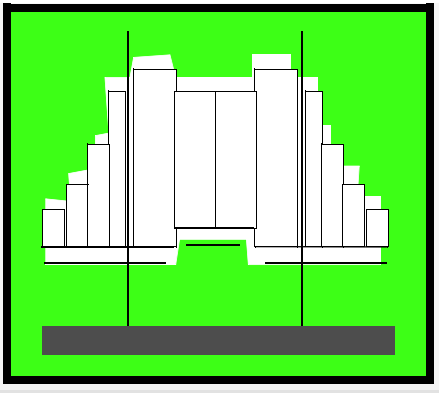
FDM Management Module



Supports Management Module SM-CSI1012

APRISMA SPECTRUM® POWERED SOLUTIONS

Device Management

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Introduction

This section describes the SPECTRUM Management Module for the FDM.

This section also provides the model type names assigned to the hubs in SPECTRUM. The model type name refers to the template used to specify attributes, actions, and associations for device models in SPECTRUM.

Note:

If you are running a previous version of SPECTRUM, the following user interface aspects may differ from those in SPECTRUM version 4.0:
-Order and names of menu selections
-Navigational features (mouse button functionality)
For information about menu selections and navigating within previous versions of SPECTRUM, refer to the ***SPECTRUM Views*** documentation.

FDDI Modules for the MMAC-FNB

FDDI modules for the MMAC-FNB FDDI modules are:

FDMMIM (FDDI Management Media Interface Module)
The FDMMIM is an Ethernet to FDDI bridge providing the connection between the Ethernet "A" channel on the MMAC and the FDDI portion of the FNB. The FDMMIM provides SMT/SNMP management of other FDDI modules (FDCMIM-04 and FDCMIM-08) in the same MMAC chassis.

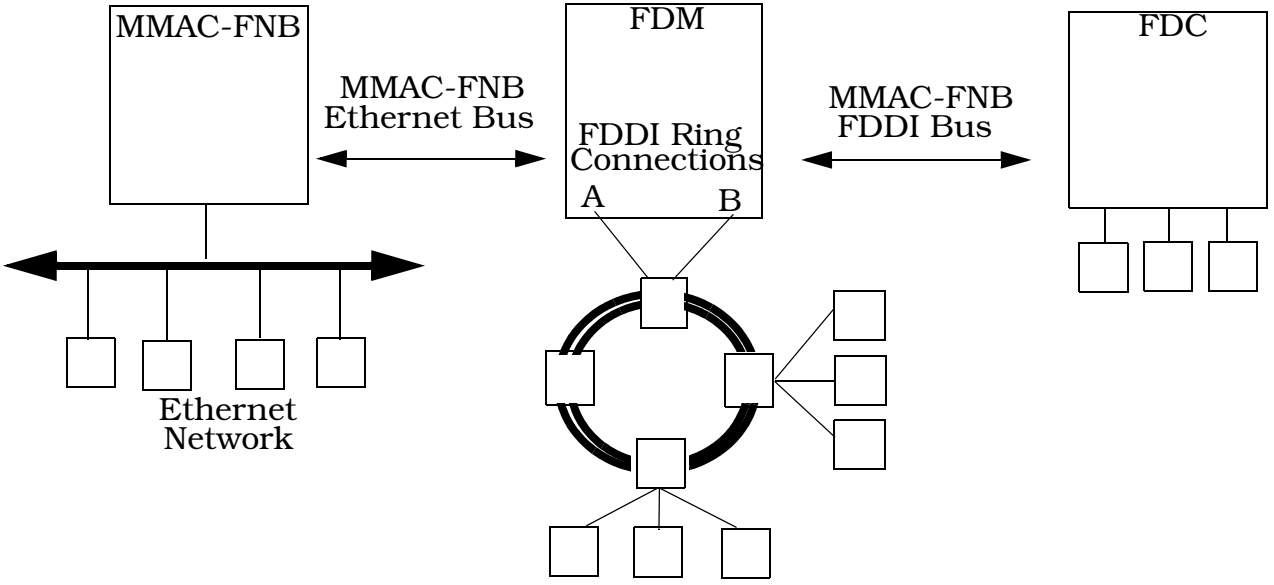
FDMMIM-04 (FDDI Management Media Interface Module)
The FDMMIM is an Ethernet to FDDI bridge and a four port concentrator on a single module. The FDMMIM-04 provides all the functionality of the FDMMIM with four additional master ("M") ports for connecting to other FDDI devices.

FCDMIM-04

FDCMIM-08 (FDDI Concentrator Media Interface Modules)

The FDCMIM-04 and FDCMIM-08 provide four and eight concentrator “M” ports respectively. These modules provide additional FDDI connections when inserted to the left of and adjacent to the FDM module in the MMAC-FNB chassis. The FDC modules provide no management functions. The FDC modules communicate with an FDM through the FNB. Although the FDC modules can work independently of the FDM, the FDM is required to provide a connection to the FDDI dual counter-rotating ring and to provide management functions. Figure 1, *Bridging Ethernet to FDDI with the FDM* shows a representation of an Ethernet to FDDI bridge.

Figure 1: Bridging Ethernet to FDDI with the FDM



FDM Management Information Bases

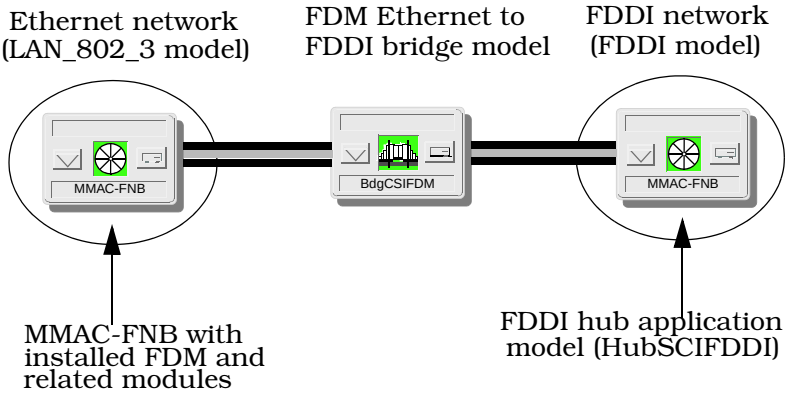
Spectrum management of an FDM is based on the following Management Information Bases (MIBs) which come as a part of the software module fo the model type:

- Internet MIB-II (RFC 1213)
- FDDI MIB (RFC 1285)
- IETF Bridge MIB (RFC 1286)
- CTSMTMIB - Cabletron Systems Enterprise-Specific MIB
- Cabletron Systems Common-MIB (not fully implemented)
- Backplane Protocol MIB

Proper Modeling of the FDM

You can create the FDM model to represent the physical FDM device bridging between two networks. Figure 2 shows a representative modeling of the FDM in SPECTRUM. The Section, Modeling the FDM, explains the proper process.

Figure 2: Bridging Ethernet to FDDI with the FDM in SPECTRUM



FDM Applications

The FDM supports only common applications. Common applications are described in the MIB II Applications, Bridging Applications, and Miscellaneous Applications, and are as follows:

- Gen Bridge App (Gen_Bridge_App)
  - Spanning Tree (Span_Tree_App)
  - Static (Static_App)
  - Transparent (CT_Tp_App)
- MIB-II (SNMP2_Agent)
  - ICMP (ICMP_App)
  - IP (IP2_App)
  - System (System2_App)
  - UDP (UDP2_App)
- FDDI SMT (FddiSMT)

Modeling the FDM

Tthis section describes the procedures for modeling the FDM Ethernet to FDDI bridging module in SPECTRUM

SPECTRUM requires that certain modeling conventions be followed in order for it to correctly monitor and manage physical devices or applications. If you use AutoDiscovery to create your FDM models, it will locate the devices on your network and create the associated models, but will not impose the proper configuration automatically. Follow the instructions contained in this section to impose the proper configuration upon models that AutoDiscovery has already created.

If you create models of your FDM devices manually, follow the modeling procedures explained in this section to create a model that is consistent with the conventions and rules used by the AutoDiscovery program when it constructs a network model, and impose the proper configuration upon that model.

Note:

In order to follow the steps in this section you must have a working knowledge of icon creation, cutting, copying, pasting, and the Device Topology (DevTop) view. For more information on using the DevTop view, refer to the ***SPECTRUM Views*** documentation.

Single Ethernet to FDDI LAN

To model a single Ethernet LAN to an FDDI LAN in SPECTRUM, follow this procedure:

1. Create a LAN_802_3 conceptual model.
2. Create an FDDI conceptual model.
3. Create a BdgCSIFDM model.
4. Navigate into the LAN_802_3 and create an MMAC-FNB model representing the hub in which the FDM is installed.

5 Navigate into the Device Topology (DevTop) view of the MMAC-FNB model and copy the BdgCSIFDM icon to the appropriate port on the Port Connections Panel.

6 Navigate into the DevTop view of the BdgCSIFDM model, copy the HubCSIFDDI hub icon from the Port Connections Panel, and paste it into the FDDI model.

Caution:

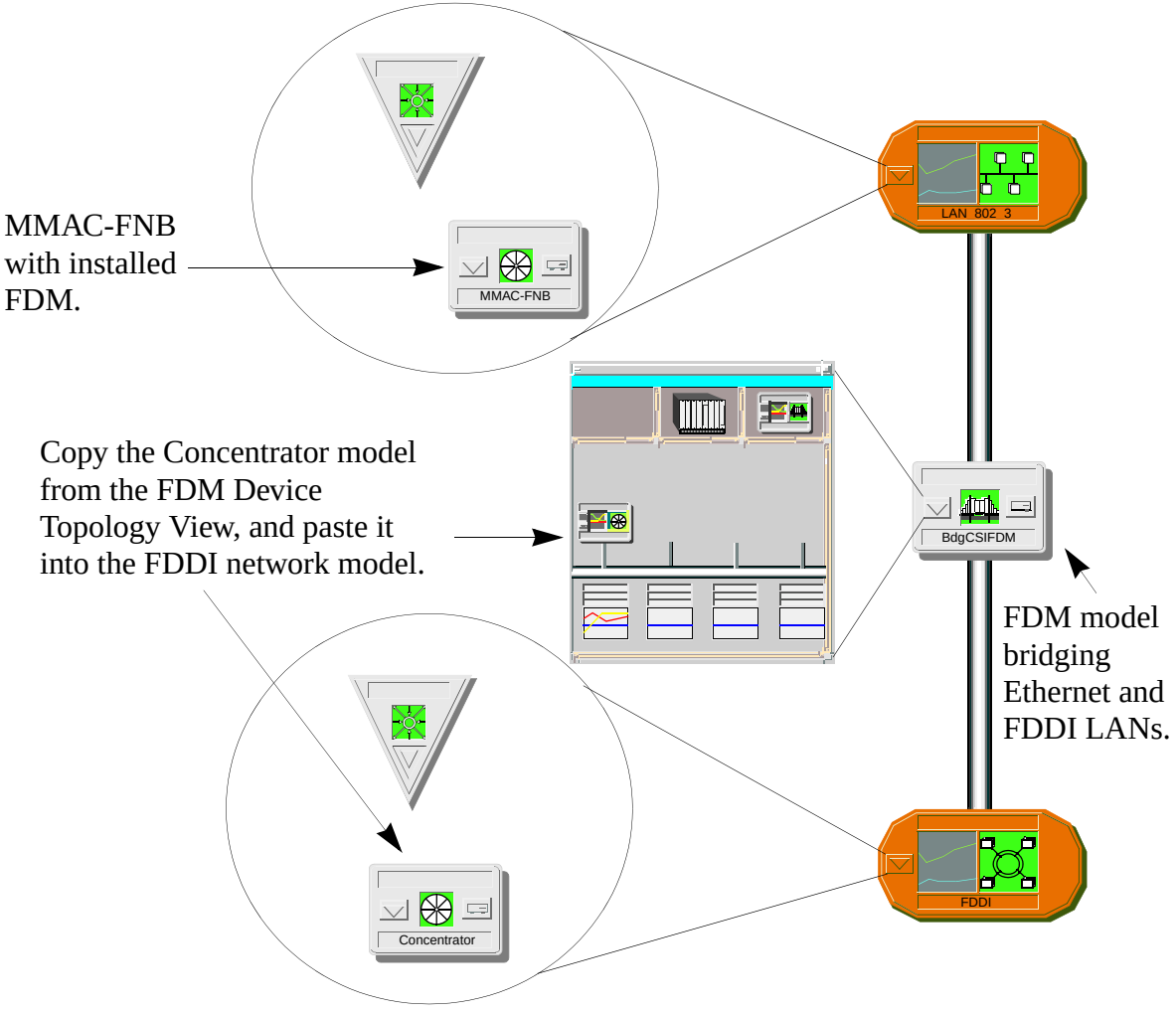
Do **NOT** use **CUT** and paste to move the HubCSIFDDI icon onto the FDDI model. Use **COPY** and paste.

7 In the BdgCSIFDM DevTop view, move the MMAC-FNB model's Off-Page Reference to the appropriate port in the Port Connections Panel.

8 SPECTRUM creates the Off-Page Reference and pipe connections automatically (refer to Figure 3).

This completes the procedure for modeling a single Ethernet to FDDI LAN. Figure 3 illustrates modeling a single Ethernet to FDDI LAN with the FDM.

Figure 3: Modeling a Single Ethernet to FDDI LAN


MMAC-FNB with installed FDM.
MMAC-FNB
LAN_802_3
Copy the Concentrator model from the FDM Device Topology View, and paste it into the FDDI network model.
BdgCSIFDM
FDM model bridging Ethernet and FDDI LANs.
Concentrator
FDDI

Multiple Ethernet LANs to an FDDI LAN

To model multiple Ethernet LANs to an FDDI LAN in SPECTRUM, follow this procedure:

1. Create a LAN_802_3 conceptual model to represent each of the Ethernet networks.
2. Create an FDDI conceptual model.
3. Create each BdgCSIFDM model.
4. Navigate into each LAN_802_3 and create an MMAC-FNB model representing each hub in which an FDM is installed.
5. Navigate into the Device Topology (DevTop) view of each MMAC-FNB model and copy the respective BdgCSIFDM icon to the appropriate port on the Port Connections Panel.
6. Navigate into the DevTop view of each BdgCSIFDM model, copy each HubCSIFDDI hub icon from the Port Connections Panel, and paste each into the FDDI model.

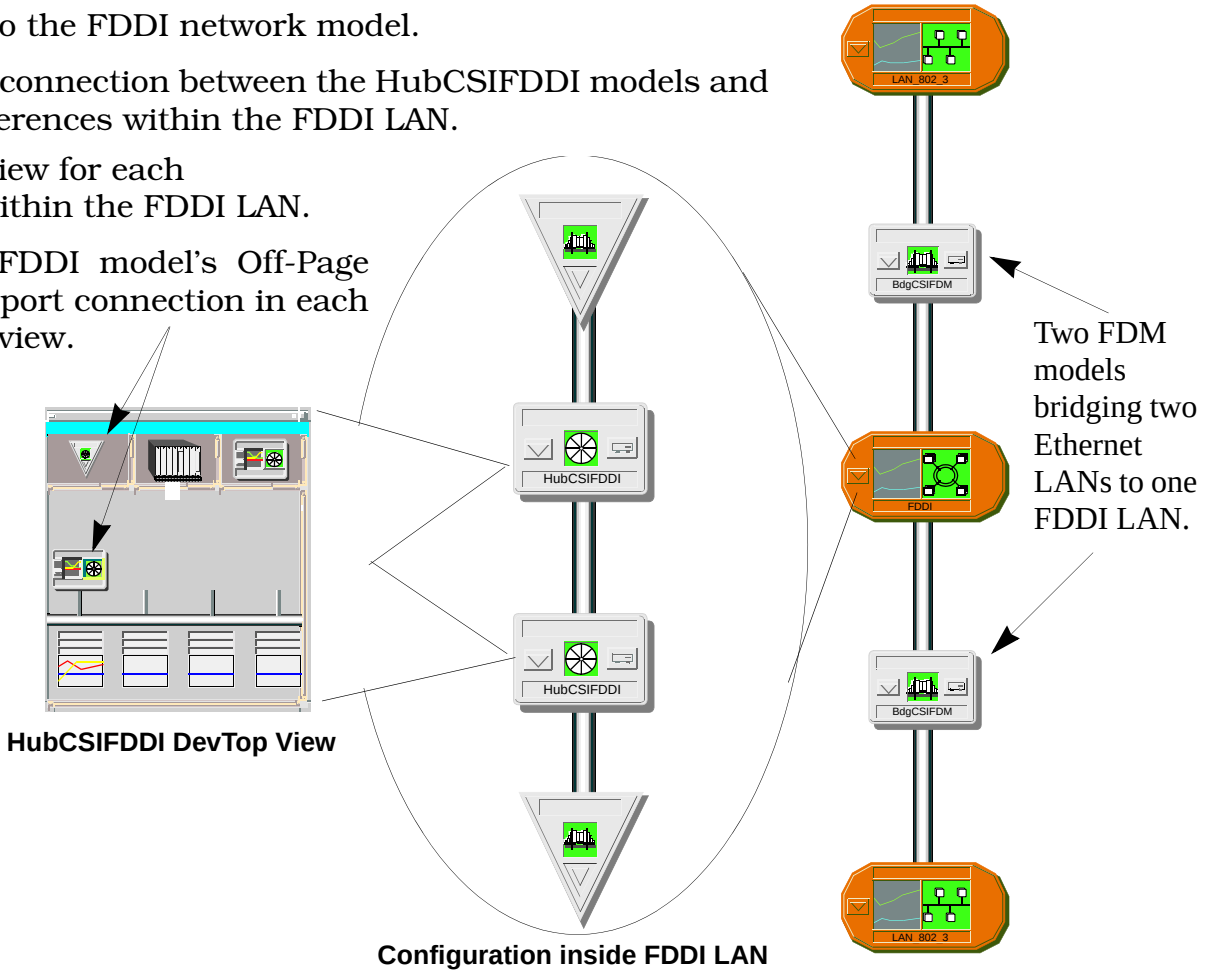
Caution: Do **NOT** use **CUT** and paste to move the HubCSIFDDI icons onto the FDDI model. Use **COPY** and paste.

7. In each BdgCSIFDM DevTop view, move the MMAC-FNB model's Off-Page Reference to the appropriate port in the Port Connections Panel.
8. SPECTRUM creates the Off-Page References and pipe connections automatically (refer to Figure 4).

This completes the procedure for modeling multiple Ethernet LANs to an FDDI LAN. Figure 4 illustrates modeling multiple Ethernet LANs to an FDDI LAN with the FDM.

Figure 4: Modeling Multiple Ethernet LANs to an FDDI LAN

1. Copy each HubCSIFDDI model from each FDM DevTop view.
2. Paste each copy into the FDDI network model.
3. Draw a logical pipe connection between the HubCSIFDDI models and the FDM Off-Page References within the FDDI LAN.
4. Open the DevTop View for each HubCSIFDDI model within the FDDI LAN.
5. Move the HubCSIFDDI model's Off-Page Reference icon onto a port connection in each HubCSIFDDI DevTop view.



Device Topology Views

This section describes the device in terms of its ports and port connections.

The FDM Management Module supports two Device Topology views:

- FDM Device Topology View
- Concentrator Device Topology View

FDM DevTop View

Access: *From the FDM icon, select* ***DevTop*** *from the* ***Icon Subviews*** *menu.*

The FDM DevTop View allows you to logically connect other devices to the Ethernet or FDDI bridging interfaces on the FDM and view statistics on the FDM's connection to the FDDI network. The FDM model type software also "connects" a concentrator icon to the FDM's FDDI bridging interface, and places it in the FDM DevTop View. Figure 5 provides an example of an FDM DevTop View.

Off-Page Reference Panel

The Off-Page Reference Panel, in the top left section of the FDM DevTop view, displays icons representing network devices connected to the FDM. These triangular-shaped icons must be logically connected to a port in the Port Connections Panel for SPECTRUM to correctly monitor and manage the connected device. To logically connect an Off-Page Reference icon to an FDM port, follow these steps:

1. Select **Edit** from the File menu.
2. Click on the Off-Page Reference icon.
3. Drag the Off-Page Reference icon onto a port in the Port Connections Panel at the bottom of the DevTop view (the triangular-shaped device icon changes to a rectangular icon).
4. Select **Save & Close** from the File menu.

Simplified Device View Panel

The Simplified Device View Panel, in the top center of the FDM DevTop view, contains a picture of the MMAC-FNB chassis with an installed FDM. Clicking on an image of a module installed in the chassis allows the selected module's port information to be gathered in the DevTop view's Port Connections Panel.

Device Icon Panel

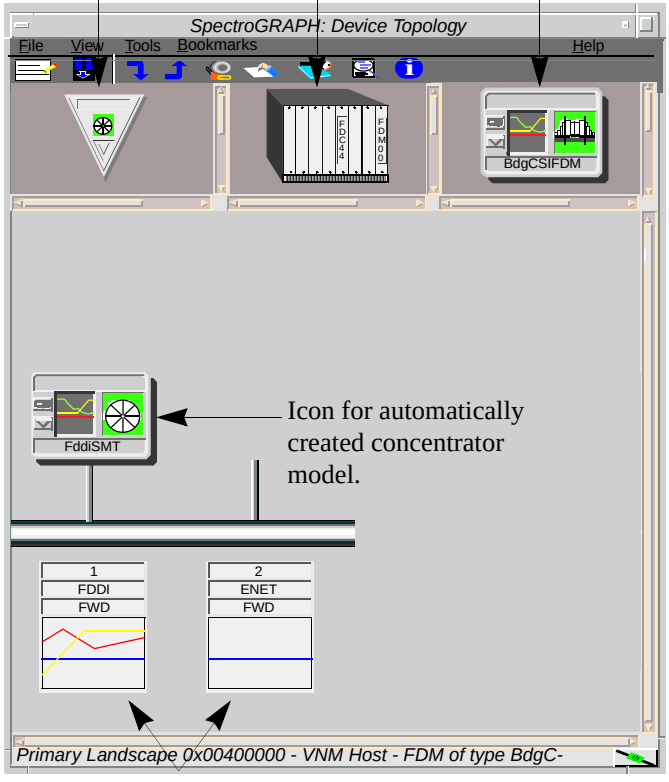
The Device Icon Panel, in the top right section of the FDM DevTop View, displays the Location View Icon for the FDM. This icon provides the same double-click functions and visual status presentations as the FDM Location View Icon.

Figure 5: FDM DevTop View

Off-Page Reference icons for the FDM. These icons need to be connected to a port.

Simplified Device view. FDM selected.

FDM Location view Icon. Use this icon to navigate to subviews for the FDM.



Status, activity and information for the FDM's FDDI and Ethernet bridging interfaces. Use these interface icons to access the Bridge Port subviews.

Port Connections Panel

The Port Connections Panel, located at the bottom of the FDM DevTop view, represents the ports contained in the FDM. You can move device models that appear in the Off-Page Reference Panel to the Port Connections Panel and connect them to the appropriate FDM port. You can also create new device models with the New Model option from the Edit menu, and connect them to the proper FDM port.

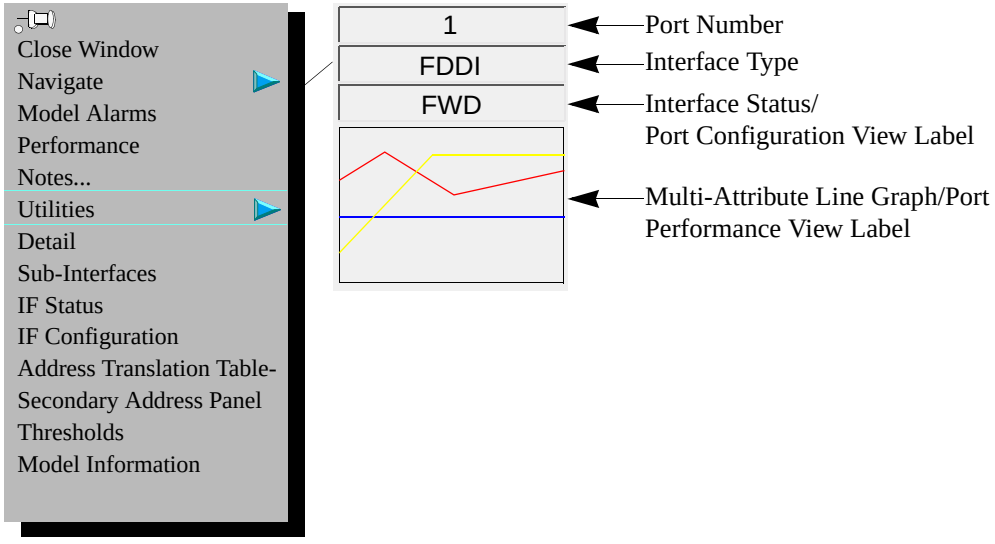
The device-to-port connection process is controlled by the “Connects_to” relation rules. SPECTRUM checks these rules to verify that the connection can be made. Once you make a connection between a device and an FDM, an association forms between the port and the connected device with this “Connects_to” relation. SPECTRUM also forms a “Collects” relation between the newly connected device model, its connected port, and the FDM.

The FDM model type software automatically “connects” a concentrator icon to the FDDI port and places it in the FDM DevTop view. You must then copy the concentrator model from the DevTop view and paste it into the FDDI network model to allow the FDM to gather statistics on the configuration and performance of the FDDI network. For more information on the proper modeling procedure, refer to the modeling instructions for your particular network configuration earlier in this section.

Bridging Interface Icons

Bridging interface icons representing the Ethernet and FDDI ports on the FDM appear at the bottom of the Port Connections Panel. Figure 6 provides a detailed illustration of the bridging interface icons. You can access the Icon Subviews menu by clicking the middle mouse button where indicated, or highlighting the icon and selecting **Icon Subviews** from the View menu.

Figure 6: FDM Bridging Interface Icon



Port Number

This label displays the number identifying the interface.

Interface Type

This label displays the type of hardware interface for the port. Possible interface types are: `FDDI` or `ENET` (Ethernet).

Interface Status/Port Configuration View Label

This label displays the status of the FDM's bridging interfaces. Table 1 provides status definitions. Double-clicking on the label accesses the Port Configuration view.

Table 1: Interface Status Definitions

Interface Status	Definition
DIS (Disabled)	Management has disabled the interface. No traffic can be received or forwarded while the interface is disabled.
BLK (Blocking)	The interface will not forward any traffic.
LST (Listening)	The FDM is not adding information to the Filtering Database but is monitoring BPDU traffic while preparing to move from the Learning to the Forwarding state.
LRN (Learning)	The FDM is learning network addresses. The Learning state occurs when the FDM's Acquired Database is being created during start-up or reconfiguration.
FWD (Forwarding)	The FDM is on-line and this interface is forwarding traffic.

Multi-Attribute Line Graph/Port Performance View

This area of the interface provides a Multi-Attribute Line Graph, indicating bridge port activity. Table 2 provides color definitions for statistics appearing in this graph. For more information on Multi-Attribute Line Graphs, and how to use them, refer to the manual *How to Manage Your Network in SPECTRUM*. Double-clicking on this graph accesses the Port Performance view.

Table 2: Multi-Attribute Line Graph Color Definitions

Color	Definition
Yellow	Receive Rate
Gray	% Filtered
Blue	% Forwarded
Orange	Transmitted Rate

Concentrator DevTop View

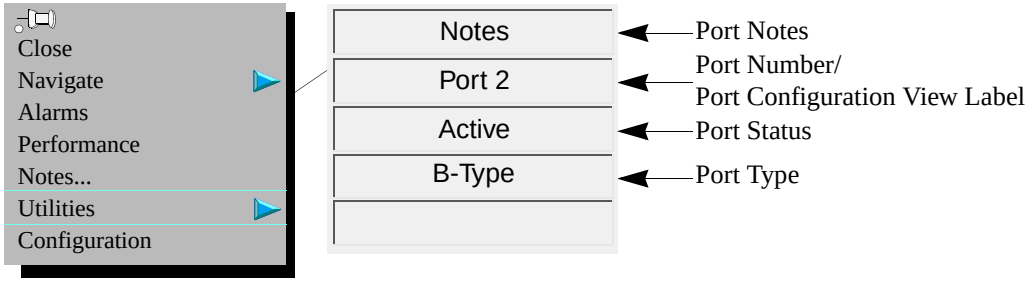
Access: *Navigate into the FDM Devtop view, then access Concentrator DevTop view through the concentrator icon.*

The Concentrator DevTop view allows you to logically connect other devices to ports on modules installed in the MMAC-FNB chassis, and gather statistics on those port connections. The Off-Page Reference, Simplified Device View, and Port Connections Panels have the same functionality, and provide the same information, as those described in the FDM DevTop view earlier in this section. The Device Icon Panel displays the concentrator icon instead of the FDM icon, and provides access to subviews for the concentrator. Figure 8 on Page 21 provides an example of a Concentrator DevTop view.

FDDI Port Icons

Port icons representing the FDM or FDC module's FDDI ports appear in the Port Connections Panel. Figure 7 provides a detailed illustration of the FDDI port icons. You can access the Icon Subviews menu by clicking the middle mouse button where indicated, or highlighting the icon and selecting **Icon Subviews** from the View menu.

Figure 7: FDDI Port Icon



Port Notes
Double-clicking on this area of the icon accesses the FDDI port notes facility.

Port Number/Port Configuration View
This label displays the number identifying this port. Double-clicking on the label accesses the Port Configuration view.

Port Status
This area of the icon displays the status of the port.

Port Type
This area of the icon displays the FDDI port type. Table 3 defines the possible FDDI port types.

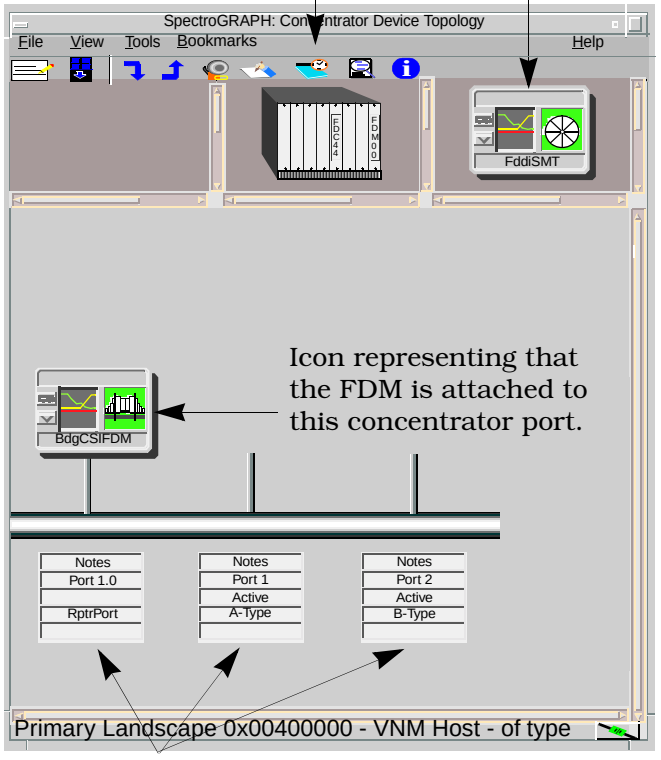
Table 3: Possible FDDI Port Types

Port Type	Description
A-Type	Connects to the incoming primary ring and outgoing secondary ring. This port is a part of a dual attachment station (DAS) or dual attachment concentrator (DAC).
B-type	Connects to the outgoing primary ring and incoming secondary ring. This port is a part of a DAS or DAC and is also used to connect a DAS to a DAC.
M-Type	Connects a concentrator to a single attachment station (SAS), DAC, or another concentrator (DAC or single attachment concentrator [SAC]). This port is only implemented in a DAC or SAC.
S-Type	Connects a SAS or SAC to a concentrator (DAC or SAC).

Figure 8: Concentrator DevTop View

Simplified Device View. FDM selected.

Concentrator Location View icon. Use this icon to navigate to subviews for the concentrator.



Status and information for the FDDI interfaces. Use the Type-A and Type-B interface icons to access the Port Configuration view, and the RptrPort interface icon to access the HubCSIFDDI Performance view.

Device Views

This section provides a description of the Device views for the FDM management module.

The Device views allow you to view either a physical or a chassis (logical) representation of the FDM bridging and FDC concentrator modules installed in the MMAC-FNB chassis. The Device views also provide you with menu bar access to the views that monitor and control the FDM and FDC modules and ports.

- The *Chassis Device View* allows you to view the logical representations of the modules. From this view, you can access performance, configuration, and status information about the modules and ports.
- The *Physical Device View* displays a physical representation of the modules installed in the MMAC-FNB chassis.

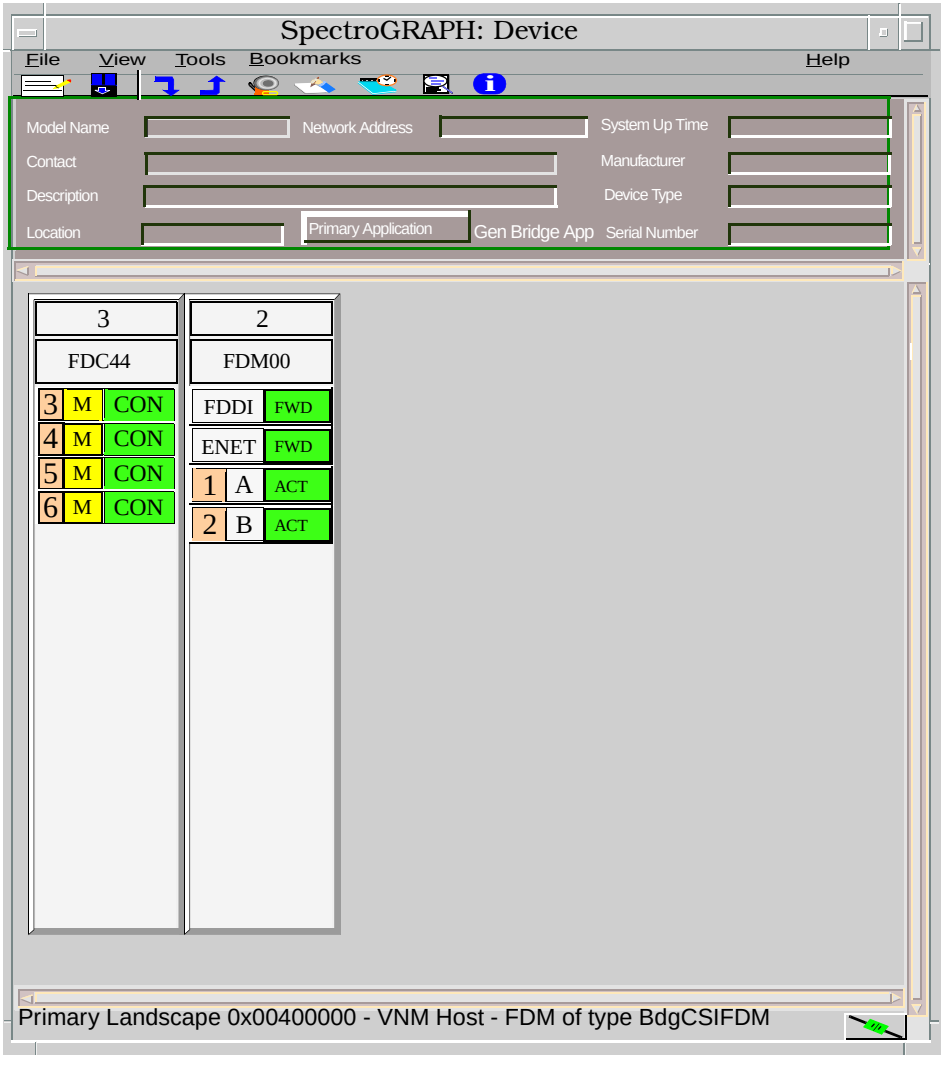
These Device views show the FDM's configuration. When the port or application status is modified, the display reflects those changes after the model's next polling cycle. When a module is added or removed from the chassis, SPECTRUM displays those changes when a model reconfiguration occurs.

Chassis Device View

Access: *From the FDM icon, select* ***Device > Chassis*** *from the* ***Icon Subviews*** *menu.*

The Chassis Device view gives a logical representation of the modules in the chassis, and the current configuration. If the configuration changes, you see the corresponding change within this view. This change in the view occurs after the model's next polling cycle, which is determined by the time interval assigned to the Configuration Timer. Figure 9 shows an example of an FDM Chassis Device view.

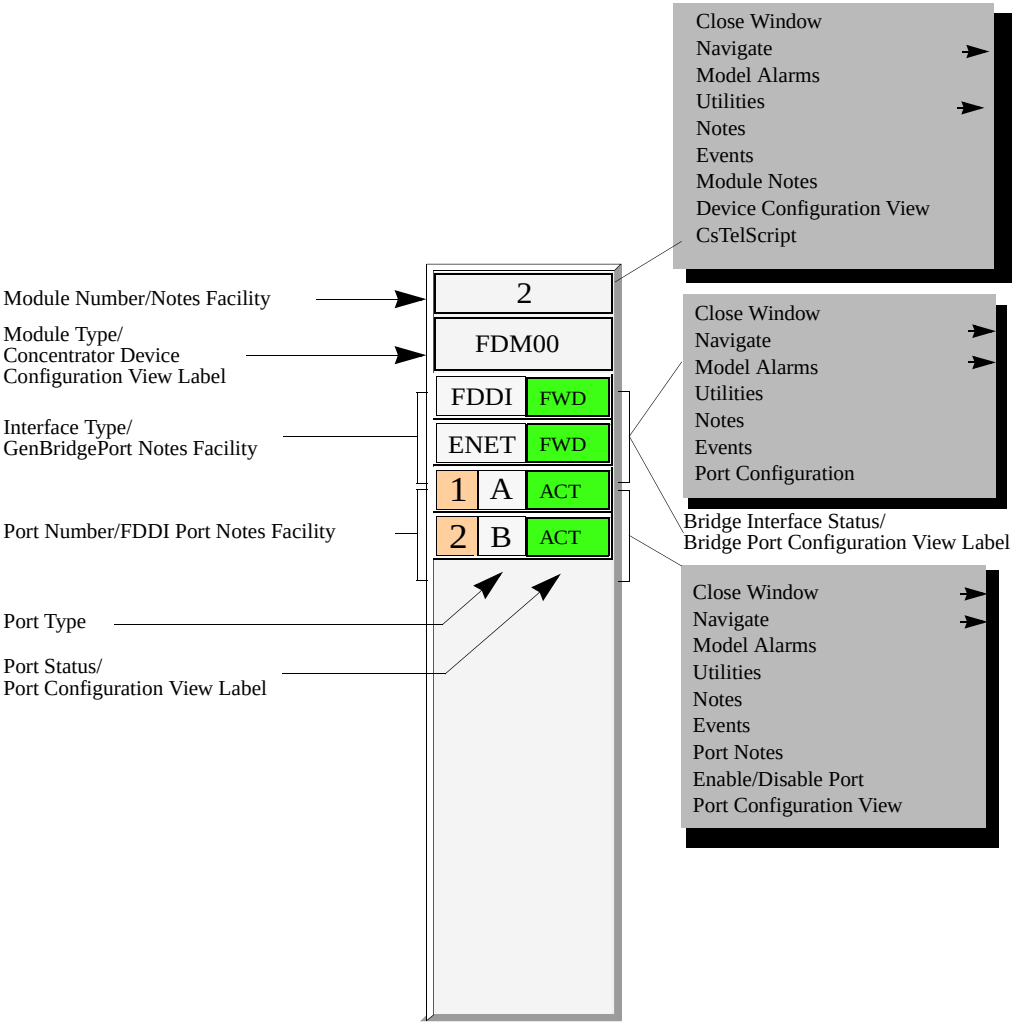
Figure 9: FDM Chassis Device View



Logical Module Icons

The Chassis Device view displays a logical representation of each of the FDDI modules installed in the MMAC-FNB. Each port on the FDM or FDC module is represented. You can access additional views for the module or port by - clicking on the module or port to highlight it and selecting **Icon Subviews** from the View menu, or double-clicking on the various icon zones. Figure 10 provides a detailed illustration of the Logical Module Icon and the following sections detail each icon zone. You can access the menus displayed by clicking and holding the middle mouse button where indicated.

Figure 10: Logical Module Icon Detail



Module Number/Notes Facility

This label displays the MMAC slot number in which the module resides. Double-clicking on the label accesses the FDM notes facility. Table 4 outlines the menu selections available per module, excluding the generic options Navigate, Utilities, Notes, Events, and Alarms.

Table 4: Module Menu Selections

Menu Selection	Description
Module Notes	Opens the Module Notes facility.
Device Configuration view	Opens the FDM Device Configuration view.
CsTelScript	Allows you to telnet to the ESXMIM.

Module Type/Concentrator Device Configuration View Label

This label displays the FDM or FDC module type. Table 5 provides a brief description of the available module types. Double-clicking on this label accesses the Concentrator Device Configuration view.

Table 5: Module Type Description

Module Type	Description
FDM00	An FDM Ethernet to FDDI bridging module providing SMT/SNMP management of other FDDI modules (FDC04 and FDC08).
FDM04	An FDM Ethernet to FDDI bridging module with four additional “M” concentrator ports for connecting to other FDDI devices.
FDM24	An FDM FDDI Dual Attached Concentrator (DAC) that supports unshielded twisted pair (UTP) cable. This module provides the same bridging and management functions as the FDM04 while also providing FDDI connectivity for up to four workstations over UTP cable.

Table 5: Module Type Description (Continued)

Module Type	Description
FDM30	An FDM FDDI Dual Attached Station (DAS) that supports single mode fiber. This module provides the same bridging and management functions as the FDM04.
FDC04	A four “M” multimode concentrator port module managed by the FDM.
FDC08	An eight “M” multimode concentrator port module managed by the FDM.
FDC24	A four “M” UTP concentrator port module managed by the FDM.
FDC28	An eight “M” UTP concentrator port module managed by the FDM.
FDC34	A four “M” single mode fiber concentrator port module managed by the FDM.
FDC38	An eight “M” single mode fiber concentrator port module managed by the FDM.
FDC44	A four “M” STP concentrator port module managed by the FDM.
FDC48	An eight “M” STP concentrator port module managed by the FDM.

Interface Type/GenBridgePort Notes Facility

This label displays the interface type for the FDM’s bridging interfaces. Interface types are either FDDI or Ethernet (ENET). Double-clicking on the label accesses the GenBridgePort notes facility.

Port Number/FDDI Port Notes Facility

This label displays the number identifying the port. Double-clicking on the label accesses the FDDI Port notes facility.

Port Type

Displays the FDDI port type. Table 6 shows the possible FDDI port types.

Table 6: FDDI Port Types

Port Type	Definition
A	Connects to the incoming primary ring and outgoing secondary ring. This port is a part of a dual attachment station (DAS) or dual attachment concentrator (DAC).
B	Connects to the outgoing primary ring and incoming secondary ring. This port is part of a DAS or DAC and is also used to connect a DAS to a DAC.
M (Master)	Connects to the incoming primary ring and outgoing secondary ring. This port is a part of a Dual Attachment Station (DAS) or Dual Attachment Concentrator (DAC).
S (Slave)	Connects a SAS or SAC to a concentrator (DAC or SAC).

Port Status/Port Configuration View Label

This label displays the status of each port: ACT (Active), CON (Connecting), or DIS (Disabled). Double-clicking on the label accesses the Port Configuration view. Table 7 outlines the menu selections available through this label.

Table 7: Port Menu Selections

Menu Selections	Opens the...
Port Notes	Port Notes facility.
Enable/Disable Port	Enables or Disables the selected port.
Port Configuration view	Port Configuration view.

Bridge Interface Status/Bridge Port Configuration View Label

This label displays the status of the FDM's bridging interfaces. Table 8 provides definitions of the possible interface states. Double-clicking on the label accesses the Bridge Port ConfigurationView. Port Configuration (opening

the Port Configuration view) is the only menu selection available through this label.

Table 8: Possible Port States and Definitions

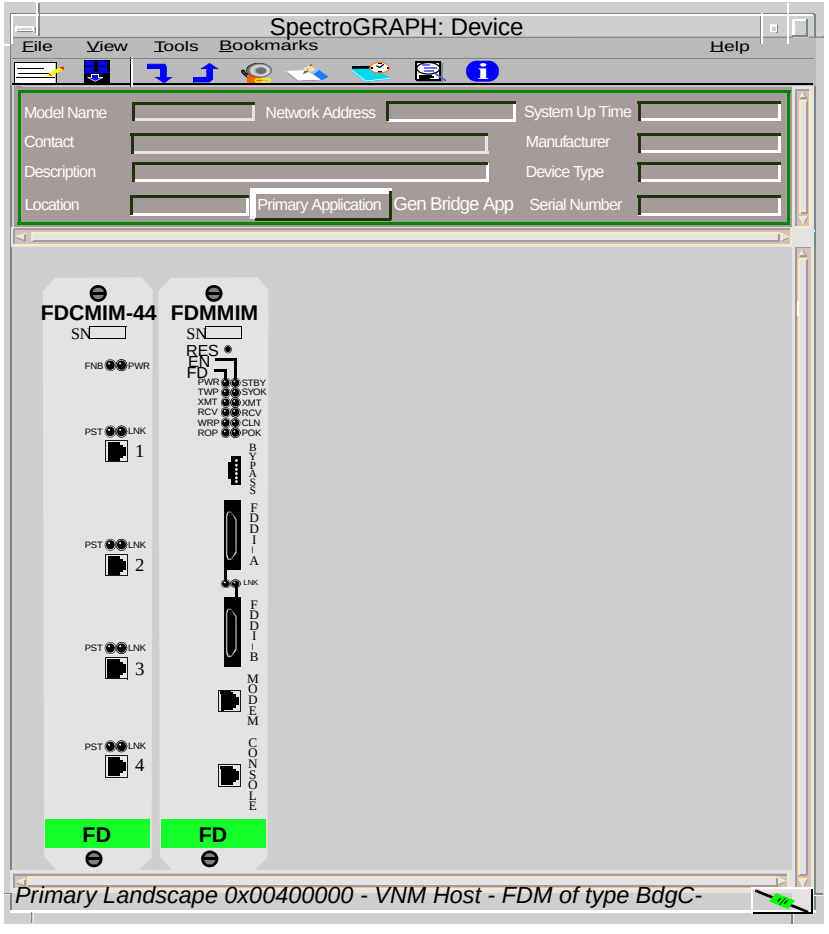
State	Definition
DIS	Disabled – Management has disabled the port. No traffic can be received or forwarded while the port is disabled.
LRN	Learning – The FDM is learning network addresses. The Learning state occurs when the FDM's Acquired Database is being created during startup or reconfiguration.
LST	Listening – The FDM is not adding information to the Filtering Database but is monitoring BPDU traffic while preparing to move from the Learning to the Forwarding state.
FWD	Forwarding – The FDM is on-line and this port is forwarding traffic.
BLK	Blocking – The port will not forward any traffic.
BRK	Broken – The port is malfunctioning.

Physical Device View

Access: *From the FDM icon, select* ***Device > Physical*** *from the* ***Icon Subviews*** *menu.*

This section describes the module information available from the FDM Physical Device view, which displays a physical representation of the FDM and FDC modules installed in an MMAC-FNB chassis. Figure 11 provides an example of a Physical Device view.

Figure 11: Physical Device View



Icon Subviews Menu Selections

Table 9 outlines the menu selections available per module.

Table 9: Physical Device View - Module Icon Subviews Menu Selections

Menu Selection	Opens the...
Module Notes	Module Notes view.
Device Configuration view	FDM Device Configuration view.

Configuration Views

This section provides descriptions of the configuration views that are available or the FDM and concentrator model to access and modify network configuration information.

The FDM and concentrator models support the following configuration views:

- FDM Device Configuration View
- Concentrator Device Configuration View

FDM Device Configuration View

Access: *From the FDM icon, select* ***Configuration*** *from the* ***Icon Subviews*** *menu.*

The FDM Device Configuration view provides information on the configuration and operating status of the FDM's interfaces.

FDM Device Configuration View Fields

The FDM Device Configuration View provides the following fields and buttons:

Contact Status
The contact status of the device.

Interface Detail

This button opens the FDM Interface Detail view, described later in this section.

Interface Configuration Table

The Interface Configuration Table provides the following port configuration information for each of the FDM's bridging interfaces:

Update

This button updates all the information in the table.

MAC/Canonical

This button switches the Interface Address entries between the MAC and Canonical addresses.

Set/Clear Filter

This button allows you to apply a specific filter to a column entry.

Sort Up/Down

This button allows you to arrange the display of information by a defined parameter.

Interface Address
The Ethernet (MAC) address of the port.

Description
A textual description of the interface including the name of the manufacturer and the product name.

Type
The type of hardware interface for the port. Possible interface types are: `fddi` or `ethernet-csmacd`.

Oper Status
The State of the port (`Up`, `Down`, or `Testing`).

Admin Status
The desired operational state of the port (`Up`, `Down`, or `Testing`) selectable through the **File/Update** feature.

Interface Device Detail View

The Interface Device Detail View provides the following detailed configuration information for the selected FDM bridging interface:

Interface Index
The interface index displays the number identifying the current interface.

Inbound Errors
The number of inbound error packets that have occurred.

Inbound Discards
The number of inbound packets that have been discarded.

Inbound Non Unicast
The number of inbound broadcast packets.

Outbound Errors
The number of outbound error packets that have occurred.

Outbound Discards
The number of outbound packets that have been discarded.

Outbound Non Unicast
The number of outbound broadcast packets.

Concentrator Device Configuration View

Access: *From the concentrator icon, select* ***Configuration*** *from the* ***Icon Subviews*** *menu.*

The Concentrator Device Configuration view provides information on the configuration and operating status of the concentrator.

Station Configuration

The Station Configuration section provides the following information:

Ring State
The current state of the FDDI Ring. Table 10 shows the possible states.

MAC Configuration
The actual configuration of the concentrator. Table 11 shows the possible configurations.

MAC Path
The ring that this concentrator resides on: `Primary`, `Secondary`, or `Local`.

MAC Address
The MAC address of this concentrator.

MAC Count
The number of MACs supported by this concentrator.

Non Master Ports
The number of Non Master ports on this concentrator.

Master Ports
The number of Master ports on this concentrator.

Table 10: FDDI Ring State Description

Ring State	Description
Isolated	The concentrator is not attached to the ring.
Non-Op	The concentrator is attempting to enter the ring.
Ring-Op	The ring is operational.
Detect	The claim/beacon process of the FDDI ring protocol has exceeded 1 second. This indicates a potential problem.
Non-Op-Dup	The ring failed to complete the claim/beacon process because a duplicate FDDI address has been detected.
Ring-Op-Dup	The ring is operational but a duplicate FDDI address has been detected.
Directed	The claim/beacon process did not complete within 9 seconds. The concentrator is now sending directed beacons to indicate a problem.
Trace	A problem has been detected with the station or its upstream neighbor. A trace is being sent to notify the upstream neighbor of the problem. The concentrator and all stations between the concentrator and its upstream neighbor will run self-tests.

Table 11: Ring Connection Descriptions

Configuration	Description
Isolated	Both PHY-A and PHY-B are disconnected from the ring. There are no connections at either the A or B FDDI port.
Wrap-A	PHY-A is wrapped via the MAC (from PHY-A/Primary In to MAC to Secondary Out/PHY-A) and PHY-B is disconnected.
Wrap-B	PHY-B is wrapped via the MAC (from PHY-B/Secondary In to MAC to Primary Out/PHY-B) and PHY-A is disconnected.
Wrap-AB	PHY-B is connected to the MAC (from PHY-B/Secondary In to MAC to Primary Out/PHY-B) and PHY-A is wrapped (connecting Primary In to Secondary Out), isolating PHY-A from the MAC.
Through-A	Indicates that the primary ring is connected to the MAC (from PHY-A/Primary In to MAC to Primary Out/PHY-B). The secondary ring is isolated from the MAC (from PHY-B/Secondary In to PHY-A/Secondary Out).
Through-B	Indicates that the secondary ring is connected to the MAC (from PHY-B/Secondary In to MAC to Secondary Out/PHY-A). The primary ring is isolated from the MAC (from PHY-A/Primary In to PHY-B/Primary Out).

SMT Information

The SMT Information section provides the following information:

SMT Version
The version of Station Management (SMT) running on this concentrator.

OBS Present
Indicates whether an Optical Bypass Switch (OBS) is connected to this concentrator.

T-Notify (sec)
The timer used in the Neighbor Notification protocol. Values can range between 2 and 30 seconds. If this timer expires before the station has received a Neighbor Identification Frame (NIF) from the neighbor station, the station will begin troubleshooting for a loss of contact.

T-Req (milli sec)
The Target Token Rotation Time (TTRT) bid made by this concentrator, in milliseconds.

T-Neg (milli sec)
The winning TTRT bid on the ring displayed in milliseconds.

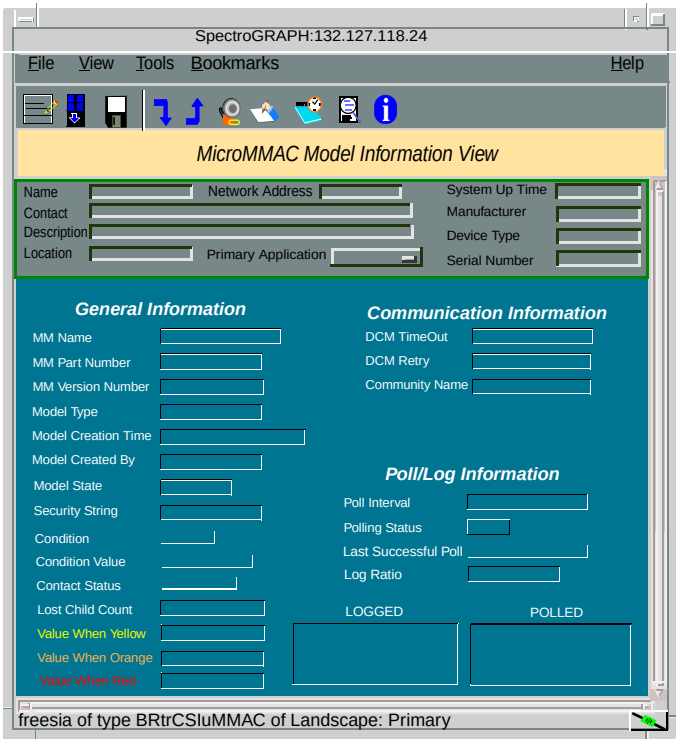
TVX (milli sec)
The valid transmission timer. The TVX detects excessive ring noise, token loss, and other faults. When the station receives a valid frame or token the TVX resets. If the TVX expires, the station starts a ring initialization sequence.

Model Information View

This section provides a brief description of the Model Information views available for models of FDM devices in SPECTRUM.

Model Information views provide descriptive and configuration information about SPECTRUM models of individual devices, interfaces, and applications. Figure 12 shows an example of the Model Information view accessed from the **Icon Subviews** menu for the MicroMMAC-E model's Device icon. Model Information views are also available for each of the Interface icons in the Interface Device and Interface Device Topology views, and for each of the Application icons in the Application view. Although these views may vary slightly depending on the particular entity being modeled, their basic layout and content are similar for most SPECTRUM management modules. Therefore these views are described in more detail in the ***SPECTRUM Views*** documentation.

Figure 12: Model Information View



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